

**Abstract ID :** 960

**Title :** Global climate change and implications for marine mammal survival

**Category :** Conservation

**Student :**

**Preferred Format :** Either Oral or Poster Presentation

**Abstract :** The Holocene assemblage of marine mammals tolerated a 120 m rise in sea level at the end of the Ice Age, first reaching today's level around 6,000 ybp. Since then, the sea has fluctuated between interglacial climatic optimum sea levels of 3.1 m higher than now and three 'mini-ice ages' dropping 0.8 - 1.45 m lower than now, with an average sea level of 1.4 m higher than today. The present warming trend began in the 15th Century and has yet to play out. During warm periods which dominated the last 6,000 years (with atmospheric temps rising 2°C warmer than now), sub-tropical dolphins reached relatively high latitudes and an ice-free passage connected the Pacific and Atlantic. This condition likely facilitated an exchange of northern mysticete populations (especially right and gray whales) as recently as 1,100 ybp. This raises a question regarding the validity of *Eubalaena japonica* if molecular evidence upon which genetic isolation is established does not include individuals taken in the high Arctic whale fishery. The speciation of marginally different forms such as *Phoca largha* and *P. vitulina*; and the variety of spinner dolphins was probably driven by late Holocene fluctuation in ocean climate. Concern exists that the present trend in global climate change will deleteriously affect all marine mammals. Considering recent data on the wide fluctuation of marine mammal natality, die offs, and abundance in general from climatic effects on habitat, abundance is the key factor in surviving climate changes. Large populations of temperate species will survive (and even prosper) in a warmer ocean. Abundant pagophilic species will also persevere. Gray whales may repopulate the North Atlantic. However, remnant populations of distinct species heavily impacted by over exploitation will have great difficulty as habitats and prey shift with the climate.